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BRIEF

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of

WIRTH et al

Atty. Ref.: 3584-9

Serial No. 09/922,938

Group: 3722

Filed: August 7, 2001

Examiner: Walsh

For: LATHE APPARATUS

February 24, 2004

Assistant Commissioner for Patents
Washington, DC 20231

APPEAL BRIEF

Sir:

Applicant submits herewith their Brief on Appeal in triplicate as required by 37
CFR §1.192.

1. REAL PARTY IN INTEREST

The real party in interest is the Assignee of record, WOODWORKER'S SUPPLY
INC.

2. RELATED APPEALS AND INTERFERENCES

On information and belief, there are no other appeals or interferences which will
directly affect or be directly affected by or have a bearing on the Board's decision in this
appeal.

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3. STATUS OF CLAIMS

Claims 1-10, 12, 14-16 and 18-21 remain pending in this application. Claims 1-10 have been allowed. Claims 12, 14-16 and 18-21 stand rejected by the Examiner. A copy of the rejected claims is attached hereto as Appendix A.

4. STATUS OF AMENDMENTS

On August 21, 2003, the Examiner issued a third official action on the merits. That action was made non-final. No amendment or reconsideration request was filed following the Examiner's rejection of August 21, 2003.

5. ISSUES

Whether claim 12 is patentable under 35 USC 103(a) as not obvious from McCormack (USP 5,186,087) in view of Gray (USP 114,670).

Whether claim 15 is patentable under 35 USC 103(a) as not obvious from Hardy (USP 2,700,912) in view of McCormack (USP 5,186,087) in view of Gray (USP 114,670) and further in view of Lebermann (USP 3,065,581) .

Whether each of claims 14, 16, 18 and 19 is patentable under 35 USC 103(a) as not obvious from McCormack (USP 5,186,087) in view of Caddaye (USP 6,178,856) and further in view of Hardy (USP 2,700,912).

Whether claim 20 is patentable under 35 USC 102(b) as not anticipated by Clay (USP 6,000,447).

Whether claim 21 is patentable under 35 USC 103(a) as not obvious from Hardy (USP 2,700,912) in view of McCormack (USP 5,186,087) and further in view of Clay (USP 6,000,447).

6. GROUPING OF CLAIMS

Claims 12 stands or falls alone.

Claim 15 stands or falls alone.

Claims 14, 16, and 19 stand or fall together.

Claim 18 stands or falls alone.

Claim 20 stands or falls alone.

Claim 21 stands or falls alone.

7. SUMMARY OF THE INVENTION

While some lathes have beds that can be raised or lowered or moved towards and away from a headstock, in general, conventional lathes have limited versatility. Indeed, it is difficult with conventional lathes to accommodate a particular long workpiece, such as a column. Thus, it was an object of the invention to provide a versatile lathe that overcomes the above-noted deficiencies of conventional lathes.

According to an embodiment of the invention, a second lathe bed, supported at its free end by a second base unit, is provided so that the lathe bed can be selectively extended to accommodate a particularly long workpiece. Thus, the invention may be embodied in a lathe assembly comprising: a base unit 12 having first and second longitudinal ends, a headstock assembly 18 provided adjacent said first longitudinal end of said base unit, said headstock assembly including a spindle housing having a spindle shaft 20 extending therethrough, a first lathe bed assembly 16 provided on said base unit and including a bedway extending longitudinally in a direction parallel to said longitudinal axis of said spindle for slidably receiving at least one of a tool rest and a tailstock; (page 7, lines 14-19; FIGS. 1 and 25), a second lathe bed assembly 200,202,232 detachably coupled to at least one of said first and second longitudinal

ends of said base unit, said second bed assembly including a second bedway 201,203 for selectively receiving at least one of a tailstock and a tool rest assembly; and a second base unit 204,234 mounted to and supporting a longitudinal end of said second lathe bed assembly remote from said first base unit. (Page 13, lines 19 - Page 14, line 13; FIGS. 13, 14, and 27-29).

Conventional lathes also tend to be rather boxy assemblies presenting monolithic rectangular headstocks and tailstocks which may hinder access to parts of the workpiece and/or may be uncomfortable to the operator, particularly if the operator leans on the headstock or tailstock during set up or operation. Thus, according to a further feature of the invention, ergonomically shaped and otherwise smoothly contoured assemblies are provided not only to adjust the discomfort and potential for injury due to edges and corners of conventional assemblies, but also to be more desirable and attractive to consumers who find a modern, sleek and sophisticated appearance to be highly desirable. Thus, according to a further feature, a lathe assembly is provided that comprises: a base unit 12 having first and second longitudinal ends, a headstock assembly 18 provided adjacent said first longitudinal end of said base unit, said headstock assembly including a spindle housing having a spindle shaft extending therethrough, a first lathe bed assembly 16 provided on said base unit and including a bedway extending longitudinally in a direction parallel to said longitudinal axis of said spindle for slidably receiving at least one of a tool rest and a tailstock; (page 7, lines 14-19; FIGS. 1 and 25), a second lathe bed assembly 200, 202, 230, 232 detachably coupled to at least one of said first and second longitudinal ends of said base unit, said second bed assembly including a second bedway 201,203 for selectively receiving at least one of a tailstock and a tool rest assembly; (Page 13, lines 19 - Page 14, line 13; FIGS. 13, 14, and 27-29) and a first tailstock assembly 24 selectively slidably disposed in said first bedway, said first tailstock assembly including a quill housing portion 252 having a quill assembly 254 rotatably disposed therein and

axially aligned with said spindle shaft of said headstock assembly, and wherein at least one of the quill housing portion 252 of the first tailstock assembly 24 and the spindle housing 52 of the headstock assembly 18 is generally elliptically shaped in longitudinal section and generally circularly shaped in transverse cross section so as to define a generally continuously curved outer peripheral surface. (Page 8, lines 15-23; Page 15, line 29 - Page 16, line 6).

It was a further object of the invention to provide a lathe which allows the operator to selectively lock the workpiece quickly and easily in position. This object has been achieved in accordance with a preferred embodiment of the invention by providing a lathe assembly comprising: a base unit 12 having first and second longitudinal ends, a headstock assembly 18 provided adjacent said first longitudinal end of said base unit, said headstock assembly including a spindle housing having a spindle shaft extending therethrough, a first lathe bed assembly 16 provided on said base unit and including a bedway extending longitudinally in a direction parallel to said longitudinal axis of said spindle for slidably receiving at least one of a tool rest and a tailstock; (page 7, lines 14-19; FIGS. 1 and 25), a second lathe bed assembly 200, 202, 230, 232 detachably coupled to at least one of said first and second longitudinal ends of said base unit, said second bed assembly including a second bedway 201,203 for selectively receiving at least one of a tailstock and a tool rest assembly; (Page 13, lines 19 - Page 14, line 13; FIGS. 13, 14, and 27-29) and an indexing assembly 110 for angularly positioning and holding said spindle shaft with respect to said spindle housing at any one of a plurality of intervals, said indexing assembly including an indexing component 112 fixedly secured to said spindle shaft and an indexing pin 126 mounted to said spindle housing of said headstock assembly, and spring 138 urged toward engagement with said indexing component. (Page 10, line 10 - Page 11, line 26).

According to yet another aspect of the invention, a tool rest assembly for a lathe apparatus having a lathe bed assembly is provided, the tool rest assembly comprising a

tool support housing extending vertically from a tool rest main body, the tool rest main body comprising a tool rest housing and a locking assembly 308 for selectively locking the tool rest housing to the lathe bed assembly, the locking assembly including a locking plate 374 for engaging an undersurface of a bedway of the lathe bed assembly; a slider block 364 seated and disposed within the tool rest housing, a non-circular locking shaft 352 extending longitudinally of the housing and disposed through a bore in the slider block 366, and a locking piston vertically slidably disposed in the slider block, the locking piston 370 having a bore 371 for being aligned with the bore of the slider block to receiving the locking shaft 352 and having a shaft 372 for being detachably mounted to the locking plate, whereby rotation of the locking shaft 352 about the longitudinal axis thereof lifts the locking piston 370 and the locking plate 374 mounted thereto while pressing the block 364 so as to clamp the housing to a bedway between the slider block and the locking plate. (Page 18, line 4 – Page 20, line 23).

8. ARGUMENT

A. Claim 12 is not obvious from McCormack in view of Gray.

In the Official Action, the Examiner asserted that "Since McCormack explicitly discloses that work can be done on either side of the headstock, it is possible that the modules (or standardized units) that are crucial to the [McCormack] invention can be placed on either or both sides of the headstock. However, McCormack fails to explicitly state that the bedway is disclosed on both sides of the headstock." The Examiner then cites the secondary reference to Gray and concludes that it would be "obvious" from Gray in combination with McCormack to provide a supported bed section on either side of the McCormack headstock. Applicant respectfully but strongly disagrees.

Although McCormack discloses that the assembly is modular, McCormack in no way teaches or suggests that headstock base 11 could or should be replicated in either

direction, nor does McCormick teach or suggest that motor assembly 15 on which headstock base 11 is disposed could or should be duplicated in either direction. Thus, while McCormack discloses the extension of bedway 14 by the attachment of a second bedway 14a, McCormack neither teaches or suggests a second base unit mounted to and supporting a longitudinal end of the second lathe bed assembly 14a remote from base unit 11. The Examiner's citation to Gray, which provides identical bedway assemblies on each side of the headstock, does not overcome the deficiencies of McCormack with respect to the invention claimed. Indeed, the skilled artisan without the benefit of applicant's disclosure at most would provide a bedway 14 and/or 14a on each side of the headstock base 11 but, consistent with McCormack's basic teachings, would provide only one head unit base and motor assembly 11/15 and would not teach or suggest a second base unit as specifically recited in claim 12.

Section 103 does not allow the Examiner to engage in picking and choosing from the prior art only to the extent that it will support a holding of obviousness, while excluding parts of the prior art essential to the full appreciation of what the prior art suggests to one of ordinary skill in the art. In re Wesslau, 147 USPQ 391 (CCPA 1975).

Note that Gray teaches a unit which is not centrally supported and it is apparently for that reason Gray provides legs at each end of his non-modular unit. McCormack on the other hand teaches a modular unit that can be selectively added to as needed, but which is supported only by a centralized base unit. Even if the skilled artisan were motivated to provide the modular bed sections taught by McCormack, on each side of the head unit, there is no teaching in McCormack nor motivation in the remaining art of record to provide a second base unit, as claimed in claim 12.

Because McCormack does not teach or suggest the replication of a base unit/support 11/15, irrespective of the location of any bed extension provided in

McCormack, McCormack cannot properly said to provide, alone or in combination with Gray, a second base unit/support 11 and/or 15.

It is therefore respectfully submitted that claim 12 is not anticipated by nor obvious from McCormack, taken alone or in combination with the remaining art of record.

B. Claim 15 is not obvious from Hardy in view of McCormack in view of Gray and/or Lebermann.

In order to prove obviousness, a challenger must present prior art references which disclose the claimed subject matter of the patent/application in question. If separate prior art references each disclose separate elements of a claim, the challenger must also show some teaching, suggestion, or incentive in the prior art that would have led one of ordinary skill in the art to make the claimed combination. See, e.g., Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 297 n.24, 304-05 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986). In determining obviousness, there must be some reason other than hindsight for selectively combining the prior art references to render the claimed invention obvious. See, e.g., Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143 (Fed. Cir. 1985).

The Examiner acknowledges that neither Hardy nor McCormack teach the claimed spring-biased pin but summarily concludes that it would be "obvious" to "redesign" the threaded pin of Hardy to be a spring biased pin. Applicant respectfully completely disagrees with the Examiner's determination.

Hardy teaches a lathe assembly having a headstock assembly 16, a conventional bed 10 and a tailstock 12 in a fixed, integrated combination.

McCormack relates to a wood lathe having a headstock detachably secured to a base 11 and including bed sections that are detachably secured to the headstock base. The Examiner, noting the limitations of applicant's claims, summarily concludes that it "would have been obvious" to modify Hardy to include a second lathe bed as taught by McCormack. Applicant respectfully disagrees. As noted above, Hardy teaches a conventional bed 10 disposed between a fixed headstock 16 and a tailstock 12. McCormack relates to an entirely different, modular wood lathe wherein essentially all component parts of the lathe, including the headstock, are detachably secured together in various configurations and/or with spacers to modify the relative position of the components. As Hardy's components are not taught as being detachably secured together, it is not self evident nor would the skilled artisan find it "obvious" to provide a "second bed" for being attached to Hardy. In fact, it is unclear how such a second bed could be attached to Hardy's assembly, or what function it could provide in view of the fixed mounting and orientation of the headstock and tailstock in Hardy. Clearly the Examiner has proposed a complete redesign of Hardy with no motivation other than the benefit of knowledge of applicant's disclosure and claims. The skilled artisan without the benefit of applicant's disclosure would not "obviously" provide an isolated component of McCormack -a second bed assembly- in the Hardy assembly. Indeed, there is no apparent use or advantage to a second bed assembly in the conventional fixed placement lathe of Hardy. Rather, the skilled artisan would use these assemblies in the alternative. It is therefore respectfully submitted that the Examiner's proposed combination Hardy and McCormack is without motivation in the prior art of record.

Furthermore, as noted above, the Examiner acknowledges that Hardy/McCormack does not teach a spring biased pin as claimed in claim 15.

Rejections based on 35 USC §103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art.

The Examiner has initial duty of supplying the factual basis for the rejection. The Examiner may not resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis. See In re Wanery, 379 F.2d 1011, 1017, 154 USPQ 173, 177-78 (CCPA 1967)..

The Examiner's further reliance on Gray does not overcome the deficiencies of the proposed Hardy/McCormack combination noted above and does not teach the claimed indexing assembly.

It is further respectfully submitted that the Examiner's proposed modification of Hardy in view of Lebermann is contrary to the invention of Hardy and is thus improper under 35 USC 103.

Indeed, it is not proper under 35 USC 103 to modify a prior art patent in a manner which would destroy that on which the invention of the prior art patent was based. Ex parte Hartman, 186 USPQ 366,67 (PTO Bd. App. 1974).

The invention of Hardy has as its primary object "to provide a lathe...in which the accuracy of setting necessary for pattern making layout can be achieved both as to any desired refinement of circle division as well as to firm retention of the setting . . ." To attain this object, Hardy provides a registering or indexing device with a pointer and a frictional clamping means so that the head spindle and face plate can be held in any desired angular position (column 1, lines 49-69). The only way that Hardy can achieve an indexing to any desired angular point, degrees that, as shown in Figure 45, are spaced a distance that is minute in comparison to the diameter of stop pin 6, is by using the frictional stop provided by set pin 6. The secondary reference to Lebermann provides spaced receptacles 107 that, as best illustrated in Figure 3, cannot achieve the fine adjustment required by Hardy's invention. Indeed, Lebermann teaches that only discrete positions defined by the alignment of a receptacle 107 and pin 111 can be

achieved with his set pin assembly. It is submitted that it is improper under Section 103 for the Examiner to suggest that Hardy's invention, which enables the minute adjustment he advocates, would be "obviously" replaced with the incremental adjustment provided by Lebermann, because that modification would destroy Hardy's invention.

For all the foregoing reasons, it is respectfully submitted that claim 15 is not anticipated by nor obvious from Hardy taken alone or in combination with McCormack, Gray and/or Lebermann.

C. Claims 14, 16, 18 and 19 are patentable over McCormack in view of Caddaye in view of Hardy.

The Examiner has asserted that it would be "obvious" to provide a slidable tailstock in McCormack in view Caddaye and that it would be "obvious" to form the tailstock to an elliptical shape in view of Hardy. Applicant respectfully submits that the Examiner's proposed prior art combination is not a combination that would be made by the skilled artisan in the absence of applicant's disclosure and, thus, the Examiner's proposed rejection is improper under 35 USC 103.

As the CAFC has said, obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. ACS Hospital Systems v Montefiore Hospital, 221 USPQ 929, 933 (Fed. Cir. 1984). There must be a suggestion in the art relied upon to use what one reference discloses in or in combination with the disclosure of the other reference or references relied upon by the Examiner. In re Grabiak, 226 USPQ 870, 872 (Fed. Cir. 1986).

Caddaye teaches a tailstock 23 slidably mounted to a lathe bed 22. As shown in Figure 1 a locking mechanism is provided to lock the tailstock in a selected position

along the length of the lathe bed 22. Caddaye discloses a tailstock 23 that is generally box-like and rectangular in vertical section, consistent with the remainder of his lathe apparatus. McCormack also teaches a wood lathe assembly composed of generally flat, planar components. The Examiner asserts that it would be "obvious" to incorporate a tailstock as shown in Caddaye in McCormack, but recognizes that even if such a combination were made, the limitations of applicant's claims 14, 16, 18 and 19 would still not be anticipated nor obvious because those references do "not explicitly state that [the] tailstock... has a generally circular transverse cross-section and generally elliptical longitudinal section." The Examiner concludes, however, that because Hardy allegedly teaches a tailstock that is elliptical in longitudinal section and circular in cross-section, it would have been "obvious" to reshape the tailstock of McCormack/Caddaye to correspond to that of Hardy. Applicant respectfully disagrees.

Firstly, it is noted that Hardy predates McCormack by over 35 years. Moreover, Hardy does not relate to a modular mechanism nor a slidable tailstock assembly. Indeed, it is not self-evident how the configuration of Hardy's tailstock could be readily and easily adapted to be slidable tailstock of Caddaye such as to include the Caddaye locking mechanism illustrated in Figure 1. Moreover, because no cross-sectional view of the tailstock of Hardy is provided nor any explanation or even comment on the configuration of this part, there is no teaching evident in Hardy that would motivate the skilled artisan to modify the McCormack/Caddaye combination. It is therefore respectfully submitted that the only motivation for the Examiner's modification of the McCormack/Caddaye combination is his hindsight knowledge of particulars of the unique and advantageous assembly proposed by applicant, including an ergonomic and aesthetically pleasing tailstock assembly.

Claim 18 is also submitted to be distinct from the applied art in its own right because McCormack does not teach or suggest a second base unit as claimed therein.

Indeed, as noted above with regard to claim 12, McCormack does not teach or suggest a second "base unit" 11/15 so that even if the prior art could be combined in the manner proposed by the Examiner, the limitations of claim 18 would still not be met.

C. Claim 20 is not anticipated by Clay.

Anticipation under Section 102 of the Patent Act requires that a prior art reference disclose every claim element of the claimed invention. See, e.g., Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1574 (Fed. Cir. 1986). While other references may be used to interpret an allegedly anticipating reference, anticipation must be found in a single reference. See, e.g., Studiengesellschaft Kohle, G.m.b.H. v. Dart Indus., Inc., 726 F.2d 724, 726-27 (Fed. Cir. 1984). The absence of any element of the claim from the cited reference negates anticipation. See, e.g., Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 715 (Fed. Cir. 1984). Anticipation is not shown even if the differences between the claims and the prior art reference are insubstantial and the missing elements could be supplied by the knowledge of one skilled in the art. See, e.g., Structural Rubber Prods., 749 F.2d at 716-17.

It is respectfully noted that the tool rest assembly recited in claim 20 includes a slider block and a non-circular locking shaft that extends longitudinally of the housing and is disposed through a bore in the slider block. Clay differs from the invention in this regard because Clay does not teach a slider block having a bore. Rather, Clay provides a support block 12 on which a cam 13-15 is rotatably disposed. Thus, it can be seen that Clay is far more complex than the invention and does not comprise the components recited in applicant's claim 20. The Examiner's reference to Figure 4 of Clay does not anticipate a slider block having a bore so that Figure 4 does not meet the limitations of claim 20. Indeed, although slider block 12 includes a bore 26 through which threaded shaft 20 extends, reference number 21 identifies the head of the eye

bolt which would be understood from Figure 2 and 3 to encircle cam 13, so that support block 12 does not include a bore for receiving a non-circular locking shaft. As such, Clay does not anticipate the tool rest recited in claim 20 and there is no teaching or suggestion in the record prior art of modifying Clay so as to produce the invention claimed.

D. Claim 21 is not anticipated by Hardy in view of McCormack and further in view of Clay.

Claim 21 depends from claim 16 which is submitted to be patentable over McCormack, Caddaye and Hardy for the reasons advanced above. It is noted that in respect to claim 21, however, the Examiner has instead combined Hardy with McCormack and the tertiary reference to Clay.

As noted above, Hardy teaches a conventional, fixed lathe bed disposed between a fixed headstock and a fixed tailstock. As Hardy's components are not taught as being detachably secured together, it is not self-evident nor would the skilled artisan find it "obvious" to provide a second lathe bed to somehow be attached to Hardy. The skilled artisan would use McCormack and Hardy in the alternative and would not attempt a combination of the same as alleged by the Examiner. The Examiner's further reliance on Clay does not overcome the deficiencies of the Hardy/McCormack combination noted above.

It is further respectfully noted that the tool rest assembly recited in claim 21 includes a slider block and a non-circular locking shaft that extends longitudinally of the housing and is disposed through a bore in the slider block. Clay differs from the invention in this regard because Clay does not teach a slider block having a bore. Rather, Clay provides a support block 12 on which a cam 13-15 is rotatably disposed. Thus, it can be seen that Clay is far more complex than the invention and does not

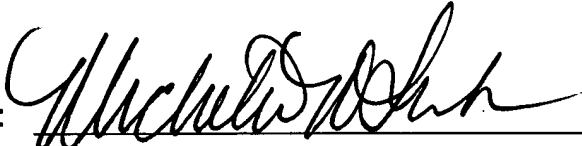
comprise the components recited in applicant's claim 21. As such, Clay does not anticipate the tool rest recited in claim 21 and there is no teaching or suggestion in the record prior art of modifying Clay so as to produce the invention claimed.

CONCLUSION

For all the reasons advanced above it is respectfully submitted that the Examiner's rejection of claims 12, 14-16 and 18-21 should be reversed and that claims 12, 14-16 and 18-21 be allowed along with already allowed claims 1-10.

Respectfully submitted,

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APPENDIX

9. CLAIMS ON APPEAL

12. (previously presented) A lathe assembly comprising:
a base unit having first and second longitudinal ends,
a headstock assembly provided adjacent said first longitudinal end of said base unit, said headstock assembly including a spindle housing having a spindle shaft extending therethrough,
a first lathe bed assembly provided on said base unit and including a bedway extending longitudinally in a direction parallel to said longitudinal axis of said spindle for slidably receiving at least one of a tool rest and a tailstock;
a second lathe bed assembly detachably coupled to at least one of said first and second longitudinal ends of said base unit, said second bed assembly including a second bedway for selectively receiving at least one of a tailstock and a tool rest assembly; and
a second base unit mounted to and supporting a longitudinal end of said second lathe bed assembly remote from said first base unit.

14. (previously presented) A lathe assembly comprising:
a base unit having first and second longitudinal ends,
a headstock assembly provided adjacent said first longitudinal end of said base unit, said headstock assembly including a spindle housing having a spindle shaft extending therethrough,
a first lathe bed assembly provided on said base unit and including a bedway extending longitudinally in a direction parallel to said longitudinal axis of said spindle for slidably receiving at least one of a tool rest and a tailstock;

a second lathe bed assembly detachably coupled to at least one of said first and second longitudinal ends of said base unit, said second bed assembly including a second bedway for selectively receiving at least one of a tailstock and a tool rest assembly; and

a first tailstock assembly selectively slidably disposed in said first bedway, said first tailstock assembly including a quill housing portion having a quill assembly rotatably disposed therein and axially aligned with said spindle shaft of said headstock assembly, and

wherein at least one of the quill housing portion of the first tailstock assembly and the spindle housing of the headstock assembly is generally elliptically shaped in longitudinal section and generally circularly shaped in transverse cross section so as to define a generally continuously curved outer peripheral surface.

15. (previously presented) A lathe assembly comprising:

a base unit having first and second longitudinal ends,

a headstock assembly provided adjacent said first longitudinal end of said base unit, said headstock assembly including a spindle housing having a spindle shaft extending therethrough,

a first lathe bed assembly provided on said base unit and including a bedway extending longitudinally in a direction parallel to said longitudinal axis of said spindle for slidably receiving at least one of a tool rest and a tailstock;

a second lathe bed assembly detachably coupled to at least one of said first and second longitudinal ends of said base unit, said second bed assembly including a second bedway for selectively receiving at least one of a tailstock and a tool rest assembly; and

an indexing assembly for angularly positioning and holding said spindle shaft with respect to said spindle housing at any one of a plurality of intervals, said indexing

assembly including an indexing component fixedly secured to said spindle shaft and an indexing pin mounted to said spindle housing of said headstock assembly, and spring urged toward engagement with said indexing component.

16. (previously presented) A lathe assembly comprising:

a first base unit having first and second longitudinal ends and including a first lathe bed assembly having first and second longitudinal ends and a first bedway defined therein for slidably receiving at least one of a tool rest assembly and a tailstock assembly;

a headstock assembly mounted to said base unit, said headstock assembly including a spindle housing portion having a spindle shaft rotatably disposed therein;

a first tailstock assembly selectively slidably disposed in said first bedway, said first tailstock assembly including a quill housing portion having a quill assembly rotatably disposed therein and axially aligned with said spindle shaft of said headstock assembly;

a locking assembly for selectively locking said first tailstock assembly to said first bedway; and

a second lathe bed assembly detachably secured to one of said first and second longitudinal ends of said first lathe bed assembly,

wherein at least one of the quill housing portion of the first tailstock assembly and the spindle housing portion of the headstock assembly is generally elliptically shaped in longitudinal section and generally circularly shaped in transverse cross section so as to define a generally continuously curved outer peripheral surface.

18. (previously presented) A lathe assembly as in claim 16, further comprising a second base unit mounted to and supporting a longitudinal end of said second lathe bed assembly remote from said first base unit.

19. (previously presented) A lathe assembly as in claim 16, wherein a longitudinal end of said second lathe bed assembly remote from said first base unit is substantially unsupported.

20. (original) A tool rest assembly for a lathe apparatus having a lathe bed assembly, said tool rest assembly comprising a tool support housing extending vertically from a tool rest main body, said tool rest main body comprising a tool rest housing and a locking assembly for selectively locking said tool rest housing to the lathe bed assembly, said locking assembly including a locking plate for engaging an undersurface of a bedway of the lathe bed assembly; a slider block seated and disposed within said tool rest housing, a non-circular locking shaft extending longitudinally of said housing and disposed through a bore in said slider block, and a locking piston vertically slidably disposed in said slider block, said locking piston having a bore for being aligned with said bore of said slider block to receiving said locking shaft and having a shaft for being detachably mounted to said locking plate, whereby rotation of said locking shaft about the longitudinal axis thereof lifts said locking piston and the locking plate mounted thereto while pressing said block so as to clamp said housing to a bedway between the slider block and the locking plate.

21. (previously presented) A lathe assembly as in claim 16, in combination with a tool rest assembly selectively slidably engaged with one of said first and second lathe bed assemblies, said tool rest assembly comprising a tool support housing extending vertically from a tool rest main body, said tool rest main body comprising a tool rest housing and a locking assembly for selectively locking said tool rest housing to the lathe bed assembly, said locking assembly including a locking plate for engaging an undersurface of a bedway of the lathe bed assembly; a slider block seated and disposed

within said tool rest housing, a non-circular locking shaft extending longitudinally of said housing and disposed through a bore in said slider block, and a locking piston vertically slidably disposed in said slider block, said locking piston having a bore for being aligned with said bore of said slider block to receiving said locking shaft and having a shaft for being detachably mounted to said locking plate, whereby rotation of said locking shaft about the longitudinal axis thereof lifts said locking piston and the locking plate mounted thereto while pressing said block so as to clamp said housing to a bedway between the slider block and the locking plate.